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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,271	12/04/2001	Mike C. Loo	US 018154	2095

24738 7590 12/18/2003

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
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EXAMINER

DINH, TUAN T

ART UNIT PAPER NUMBER

2827

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/001,271	LOO, MIKE C.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tuan T Dinh	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_                      6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Dohya (U. S. Patent 5,012,047).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

As to claim 1, Dohya discloses a substrate (1, column 1, line 68) for flip chip packaging as shown in figure 1, comprising:

a multiple layer substrate having a first layer (15, column 2, line 4) forming a signal plane (12a, 12b, column 1, line 68, column 2, line 1) and second and third layers (13, column 1, line 67, 14, column 2, line 11) beneath said first layer (15), said second and third layers (13, 14) forming selectively power and ground planes;

power, ground, and signal bump pads (the signal wiring layers 15; 16 formed as bonding pads or lands; column 2, lines 6-10) on said first layer, said power and ground bump pads (15, 16) extending in parallel rows in a designated position; and

microvias (viaholes 17, column 2, line 7) connecting said power bump pads (16) directly to said power plane (14) and said ground bump pads (16 or 15) directly to said ground plane (13).

As to claim 2, Dohya discloses the substrate as shown in figure 1 including a further signal plane (16) below said power and ground planes (13, 14), and microvias (17) connecting related signal bump pads on said first layer to said further signal plane (note: figure 1 shows more than one signal layer 16, and via 17 connecting related signal bump pads (15) on the first layer 12 to the further signal plane 16).

As to claims 3-4, Dohya discloses in figure 1 the substrate wherein said first layer (15) on a top surface of said substrate, and said further signal plane (16) on a bottom surface of said substrate.

As to claim 5, Dohya discloses the substrate in figure 1 wherein said signal bump pads (15) extending in parallel rows; said rows of signal power and ground bump pads (16) positioned sequentially in the order of positioning of said signal, power and ground planes.

### ***Response to Arguments***

3. Applicant's arguments filed 08/29/03 have been fully considered but they are not persuasive.

#### **Applicant argues:**

(a) Dohya discloses a multiplayer wiring substrate, which is different from a substrate for flip chip package.

(b) Dohya does not disclose "microvias connecting said power bump pad..."

**Examiner disagrees.**

Response to argument (a), applicant recites a substrate for flip chip package, claim 1, line 1, which is a structure of the substrate and intended use for flip chip package; therefore, "**for flip chip package**" is not positive claim. Dohya clearly discloses the multiplayer wiring substrate (not a PCB) providing a plurality of laminated wiring layers (column 1, lines 46-47, and 65-68).

Response to argument (b), the microvia, which is a via, has a small dimension of micro-millimeter; however, applicant does not recite how large/small of the microvia to apply to the claim language. Dohya discloses a viahole (17), which is a via, and has a small dimension. The viaholes (17) are directly connected to ground/power pads for the purpose of providing power and shield to the substrate.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dubuisson et al., Haller et al., Hsuan et al., Degani et al., Mak et al., Hinds, Haas et al., and Gower et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

Tuan Dinh  
December 04, 2003



**EVAN PERT**  
**PRIMARY EXAMINER**